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March 12, 1996



Building The  
Wireless Future™

Mr. William F. Caton  
Secretary  
Federal Communications Commission  
1919 M Street, NW, Room 222  
Washington, DC 20554

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FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF SECRETARY

**CTIA**

Cellular  
Telecommunications  
Industry Association  
1250 Connecticut  
Avenue, N.W.  
Suite 200  
Washington, D.C. 20036  
202-785-0081 Telephone  
202-785-0721 Fax  
202-736-3256 Direct Dial

**Randall S. Coleman**  
Vice President for  
Regulatory Policy and Law

Re: Ex Parte Presentation Concerning ET Docket No. 93-62  
(Guidelines for Evaluating the Environmental Effects of  
Radiofrequency Radiation)

Dear Mr. Caton:

On Monday, March 11, 1996, the Cellular Telecommunications Industry Association ("CTIA") and the Institute of Electric and Electronics Engineers, Inc. Standards Coordinating Committee 28, Non-Ionizing Radiation ("IEEE/Committee 28"), met with Ms. Jackie Chorney, Legal Advisor to Chairman Reed E. Hundt, Ms. Suzanne Toller, Legal Advisor to Commissioner Rachelle B. Chong, Mr. David Siddall, Legal Advisor to Commissioner Susan Ness, and Messrs. Bruce Franca, Robert Cleveland, Michael Buas, Allen Stillwell and Jerry Ulsec of the Office of Engineering and Technology regarding the Commission's pending consideration of the above-referenced proceeding. CTIA was represented by Messrs. Brian Fontes, Thomas Lukish and Randall Coleman. Representing IEEE/Committee 28 were Mr. John M. Osepchuk, Ph.D. of Full Spectrum Consulting and Chairman of IEEE/Committee 28, Dr. Eleanor R. Adair of the John B. Pierce Laboratory and Vice Chair of IEEE/Committee 28, and Ronald Peterson of AT&T Bell Laboratories and Executive Secretary of IEEE/Committee 28.

At the meeting, CTIA and IEEE/Committee 28 presented the attached documents. Pursuant to Section 1.1206 of the Commission's Rules, an original and one copy of this letter and the attachments are being filed with your office. If you have any questions concerning this submission, please contact the undersigned.

Sincerely,

  
Randall S. Coleman

Attachments (2)

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IEEE

STANDARDS COORDINATING COMMITTEE 28  
NON-IONIZING RADIATION

Chair

John M. Osephuk, Ph.D.  
Full Spectrum Consulting  
(508) 287-5849

Vice Chair

Dr. Eleanor R. Adair  
John B. Pierce Laboratory  
(203) 562-9901

IEEE Standards Staff Liaison

Mr. John D. Parrel  
IEEE Standards Activities  
(908) 582-3814

Executive Secretary

Mr. Ronald Petersen  
AT&T Bell Laboratories  
(908) 582-6442

Membership Chair

Dr. Quirino Balzano  
Motorola, Inc.  
(305) 475-6139

Subcommittees Chairs:

SC-1

Techniques, Procedures and  
Instrumentation

Mr. Howard Bassen

Ctr. Devices & Radiological Health,  
FDA

(301) 443-3840

SC-2

Terminology and Units  
of Measurements

Mr. Richard A. Tell

Richard Tell Assoc., Inc.  
(702) 645-3338

SC-3

Safety Levels with Respect to  
Human Exposure, 0-3 kHz

Dr. John A. Bergeron

G. E. Corp. R & D

(518) 387-6350

Mr. William Feero

Electric Research and Management, Inc.  
(814) 387-6350

SC-4

Safety Levels with Respect to  
Human Exposure, 30kHz-300GHz

Dr. John A. D'Andrea, Ph.D.

Naval Medical Research Institute

(210) 536-6527

Dr. Om P. Gandhi

University of Utah

(801) 581-7743

SC-5

Safety Levels with Respect to  
Electro-Explosive Devices

G.A. (Drew) Koben

Naval Surface Warfare Center

(703) 663 4296/97

Mr. Ric Woolnough

Bristol Aerospace Defence Limited  
0126245650

March 11, 1996

OUTLINE

of

Reasons why the FCC should

adopt ANSI/IEEE C95.1-1992

as proposed in NPRM

Docket No. 93 - 62

# Focus on People and Organizations Behind the Words

FCC Docket No. 93 - 62

IEEE SCC 28

or

NCRP

An on-going standards organization with long experience and largest standards activities staff in the world, backed up by the largest technical professional society in the world, the IEEE.

Largest consensus body in the world on non-ionizing radiation (microwaves/RF).  
On-going committees:  
Parent (~70); WG(~150)  
Total mailing list ~ 350.

Open process, frequent meetings, extensive documentation.

C95 standards are standards accepted by OSHA, DOE, DOD, FDA and other agencies as well as states and companies. Cites rules for maximum permissible exposures.

Rules and rationale reflect large international consensus.

A body chartered by Congress to study ionizing radiation and make reports, including recommendations. No extensive experience in standards-setting. No staff to support standards on an on-going basis.

Small ad-hoc committees (e.g. --6 people) include recommended guidelines as a chapter in periodic literature reviews.

Closed process: few meetings of small committee; no documentation of process.

Recommendation is a guide not a standard. Not accepted by OSHA, DOD, DOE, or most companies. Language not of mandatory character.

Includes one rule without scientific basis, not accepted anywhere else in the world.

Organization, Committee and working groups to provide on-going clarification, interpretation, and supplements to users.

C95 provides detailed instructions for implementing standard, measurements, etc. through C95 standards.

SCC 28 community working toward new revision of C95.1, with improvements beyond 1992

Adoption of C95 by FCC would conform to directive OMB A 119 encouraging Federal support and use of voluntary standards.

C95 standards contribute to an ongoing process of international harmonization through transnational members, and liaison with CENELEC, IRPA, WHO, NATO.

- No staff, policy or committee for on-going clarification, interpretation for "users" of guideline.

- NCRP(1986) does not include detailed instructions for application of guideline. Obsolete reference for measurements.

- NCRP(1986) , proposed by FCC (EPA) is obsolete. New ad-hoc committee likely to recommend guideline like that of C95 with update.

- Adoption of NCRP(1986) is not consistent with OMB A 119. NCRP(1986) is not a voluntary standard but is a recommended guideline.

- NCRP has no transnational members, and no liaison with foreign organizations dealing with non-ionizing radiation.

March 11, 1996

## **CTIA SUMMARY STATEMENT ON RF EXPOSURE GUIDELINES**

### **Status**

- In 1993, the FCC proposed adopting ANSI/IEEE C95.1-1992 as its guideline for limiting exposure to radio-frequency fields. See Guidelines for Evaluating the Environmental Effects of Radio Frequency Radiation, ET Doc. No. 93-62.
- The Telecommunications Competition and Deregulation Act of 1996 requires the Commission to complete this proceeding within 180 days of the Act's effective date of February 8, 1996.
- CTIA supports adoption of the ANSI/IEEE standard in its entirety. CTIA believes that the ANSI/IEEE standard is technically sound and scientifically-based, is supported by a broad consensus of knowledgeable experts, and will assure safe use of the vast array of cellular and PCS products entering the marketplace.
- CTIA does not support adoption of an RF exposure guideline which represents an amalgamation of the ANSI/IEEE guideline and the 1986 NCRP standard. This approach, which has been recommended by the Environmental Protection Agency (EPA), will create unnecessary confusion and complexity, could delay the deployment of new digital technologies, and would not provide increased protection of public health.

### **American National Standards Institute/Institute of Electrical and Electronic Engineers (IEEE)**

- The present IEEE C95.1-1992 is a broad consensus standard based on extensive research and experience in RF safety standards. It reflects input, consultation and advice from over 120 scientists, including several experts from government and academic institutions. The standard is a credible resource and supported by the scientific community. The adoption process for an ANSI national standard requires extensive scientific peer review and public participation.
- The IEEE guideline is presently the basis for siting telecommunications facilities in many jurisdictions. Massachusetts and New Jersey are two examples of states that have passed laws to this effect. Many local jurisdictions have this requirement within their zoning codes as a basis for permit approval.
- IEEE C95.1-1992 is the guideline used by OSHA, DOD, DOE and NASA and is consistent with OMB A119 directing federal agencies to support and adopt voluntary consensus based standards.

- In response to the FCC NPRM, the FDA/CDRH recommended approval of IEEE C95.1-1992 (with the exception of the low power device exemption).
- The Department of Defense (DOD) has also recommended adoption of the IEEE standard.
- The IEEE C95.1-1992 was based on an exhaustive review of the scientific data-base on animal behavior modification in the presence of RF fields. Based on these data, exposure limits were selected that resulted in the lowest specific absorption rate necessary to protect against all known adverse effects.

#### **National Council on Radiation Protection and Measurement (NCRP)**

- The NCRP guideline was published in 1986 and has not been changed or adjusted since then. By contrast, the IEEE C95.1-1992 guideline was first published in 1982 and has undergone many improvements during the past 14 years, the most recent one in 1992.
- NCRP was established with six permanent members, supported by five advisors and five consultants, and limited participation to an invitation only basis. Its activities did not include outreach to a broad based scientific community, and cannot be compared to the inclusive consensus process required for IEEE guideline development.
- The NCRP has been dissolved and a new council has been formed with the primary purpose to review and develop new NCRP guidelines based on current science and technology. It is expected that the new NCRP guidelines will be more closely aligned with the present IEEE C95.1-1992 guideline.
- NCRP, because of its lack of permanency, has no ongoing activity to support implementation of its guideline as a national standard, leaving another entity, such as the FCC, as the primary enforcer and source of guidance. Moreover, the NCRP does not require peer review or comment through an established, credible consensus process. This lack of fundamental support from a scientific base will only lead to confusion and conflicting interpretations, resulting in delays in implementation of the guideline.
- NCRP contains unsupportable requirements to reduce occupational limits when the fields are amplitude modulated in the low frequency spectrum. No other international standards organization recognizes the basis or need for this requirement.
- NCRP guidelines are not more protective than IEEE C95.1-1992 at the higher frequencies. In fact, because NCRP guidelines retain six minute and 30 minute averaging time at all frequencies up to 100 Ghz, it could allow greater exposure to RF thermal effects at the higher microwave frequencies.

### **Drawbacks of Adopting a Hybrid Standard**

- EPA has recommended a number of modifications in ANSI/IEEE C95.1-1992. Development of a "hybrid" standard which combines the NCRP and ANSI/IEEE guidelines in accordance with EPA's recommendations would be unwarranted and counterproductive.
- The ANSI/IEEE guideline has been widely adopted by local jurisdictions and licensees seeking to deploy cellular and PCS technology. Shifting to a different standard will create confusion and delay and could encourage costly litigation over the siting of telecommunication facilities. Statutory changes would be needed in some states and zoning code changes in others, creating additional barriers to the introduction of new technologies which Congress and the Administration are committed to fostering.
- The ANSI/IEEE process provides mechanisms for responding to requests for interpretation and addressing new issues as they arise. Since no comparable mechanism exists for the 1986 NCRP standard, the FCC would itself shoulder the burden of responding to requests for guidance and interpretation as implementation proceeds. The Commission is ill-equipped to assume this responsibility and would be forced to divert limited resources from other pressing tasks.
- Since a new NCRP committee has been formed to update the 1986 standard, the provisions of that standard are already out-of-date. Thus, the FCC would be relying on a guideline which will soon be obsolete and is being updated by the sponsoring organization.
- The differences between the ANSI/IEEE and NCRP guidelines emphasized by EPA do not involve significant public health concerns but rather reflect the preferences of the EPA technical staff. In fact, the ANSI/IEEE standard arguably provides a higher level of protection than the NCRP standard:
  - In the upper regions of the spectrum, IEEE employs a declining time over which exposure is averaged (e.g. 5 seconds at 100 GHz and 0.16 second at 300 GHz), versus NCRP which limits occupational exposures to fixed six-minute averaging time and general-population exposures to a 30-minute averaging time. As a result, IEEE allows less energy absorption over a large portion of the upper frequency region.
  - While IEEE uses a two-tier framework of "controlled" and "uncontrolled" exposure environments, a realistic tool for assessing and conforming exposure conditions, NCRP employs the vague, discretionary concepts of "worker" and "general public." The IEEE approach, unlike NCRP, provides exposure criteria guidelines that protect people based on what they actually do, not who they are.

- While EPA has emphasized that the ANSI/IEEE standard is based only on "thermal effects", the reality is that the committee conducted a full review of the entire data-base on RF exposure and considered all studies documenting changes in behavior or adverse health effects in the presence of RF fields. EPA has emphasized the possible occurrence of "athermal" effects from RF exposure but has not offered evidence demonstrating that such effects can occur at the frequencies associated with cellular and PCS products. If such evidence were to become available, it should be considered in the standard-setting process but exposure guidelines cannot be based on speculation alone.

### **Conclusions and Recommendations**

- Given the extensive consensus process supporting the ANSI/IEEE standard and its broad adoption by government and industry, compelling public health concerns should exist before the FCC considers a different approach. No such concerns have been identified. In fact, the ANSI/IEEE standard is more protective than the NCRP guideline in important respects.
- Given the lack of unanimity between EPA technical staff and scientists at other agencies and outside the government, the FCC should convene a roundtable meeting of experts if it is inclined to depart from the ANSI/IEEE standard. This meeting might be organized under the auspices of an interagency process so that differences in approach between agencies can be evaluated and resolved by a neutral arbiter.
- Alternatively, the FCC should proceed with a final guideline based on the ANSI/IEEE standard but ask EPA to work with the IEEE committee to update the standard in light of new concerns or data.